Soysal Degirmenci

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Summary

Machine Learning technical lead with extensive experience in risk evaluation, robotics and customer support. Proficient in the in full lifecycle of ML models, including data preparation, training, offline/online testing and deployment. Passionate about mentoring scientists and engineers. Areas: supervised learning, Reinforcement learning, Self-supervised learning, Generative modeling, Simulation.

Experience

Amazon
San Diego, CA

Senior Machine Learning Scientist — 2021/01 - current

- Technical ML Lead in a team under retail division, focusing on advanced ML techniques to enhancing Amazon's safety and supporting selling partners
- Led a cross-team project aimed at managing fraud risk by considering long-term customer satisfaction.
- Developed a Reinforcement Learning based approach estimated to improve top line by 11%, while reducing scientist hours by 80%.
- Prototyped and supported deployment of autoregressive offline simulators for two risk programs, increasing the top line by an estimated 5% on average.
- Lead author of a NeurIPS 2022 Offline RL Workshop paper: "Benchmarking offline reinforcement learning algorithms for e-commerce order fraud evaluation".
- Currently working on autonomously solving Amazon selling partner issues using Large Language Models.

Brain Corp.
San Diego, CA

Machine Learning Engineer — 2020/01 - 2021/01

- First ML expert on inventory scan project for real-time shelf inventory insights in grocery stores, utilizing data collected by robots.
- Worked on various stacks, including image metadata enrichment, object detection and recognition using computer vision, image processing, data monitoring and visualization, supervised machine learning to improve report accuracy.
- Developed technical requirements of AI products for external partnerships.
- Supported pilots with retail companies. (Now deployed in over 500 stores nationwide)

ID Analytics, a Lexis-Nexis Risk Solutions company
San Diego, CA

Senior Data Scientist — 2016/04 - 2020/01

- Developed ML models for credit risk assessment (credit score) used by large US companies in several industries (4 out of top 10 in banking, 2 out of top 3 in wireless, 2 out of top 5 in automotive).
- Designed and developed a novel ML-based identity verification and authentication product for efficient customer onboarding.
- Led the initiative to build an internal tool for end-to-end model building for identity fraud risk assessment. Reduced time to build a compliant model from scratch by 85%. (3-4 months to 2 weeks)
- Oversaw a team of 4 scientists to evaluate internal and external data sources to improve core ML product performance. Formulated a process with objectives, metrics and deliverables. Reduced time spent on data evaluation by 75% on average.
- Notable R&D projects: "Explaining and interpreting complex ML models", "Inductive graph representation using neighborhood sets".

Education

Washington University in St. Louis
St. Louis, MO

PhD, Electrical Engineering — 2011/08 - 2016/04

- Dissertation: A General Framework of Convex Optimization Using Jensen Surrogates and Acceleration Techniques

Middle East Technical University
Ankara, Turkey

BS, Electrical and Electronics Engineering — 2006/08 - 2011/06

Skills

- Programming languages: Python, SQL, C, C++, Java, JavaScript, MATLAB, Rust
- Machine Learning and Data Science: Pandas, Jupyter, PyTorch, Tensorflow, Keras, XGBoost, LightGBM, scikit-learn, Sagemaker, Kafka, Spark, Hive, Snowflake, Tableau, DynamoDB
- Other: AWS, LaTeX, Git, ROS, Next.js, React, CSS, HTML, bash

Other Projects

- The Yada Yada Generator: A web app that generates Seinfeld scripts using a large language model based on user-provided titles.
- SemanTRik: A Turkish word game web app where users predict daily words based on their semantic relations to their guesses.
- My Philly Art Museum Guide: A simple web app to identify and provide information on art pieces in Philadelphia Art Museum using computer vision and serverless computing.
- Turkle: A Wordle clone for Turkish.